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ABSTRACT

Presented is an overview of the history and current methods and a review of some critical issues related to behavior modification. Behavior modification is defined, and examples of methods such as positive reinforcement, aversive control, and systematic desensitization are provided. Summarized are evaluations of the effectiveness of behavior modification, and notes are current programs supported by the Alcohol, Drug Abuse, and Mental Health Administration. Examined are critical issues including the fear of control, the use of aversive control, and use of behavior modification in prisons. Also discussed are implications for behavior modification of emerging legal rulings, and attempts to impose ethical safeguards for behavior modification programs. (LS)

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BEHAVIOR MODIFICATION

Perspective on a Current Issue

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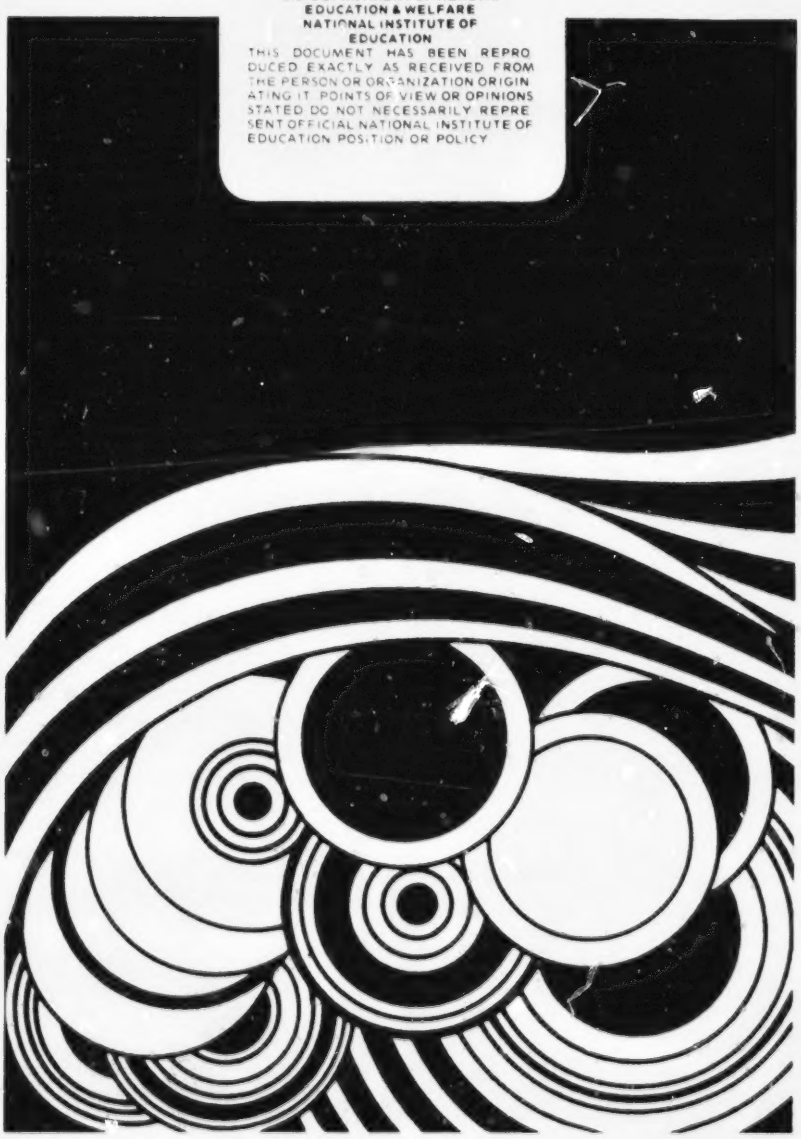

National Institute of Mental Health

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BEHAVIOR MODIFICATION: PERSPECTIVE ON A CURRENT ISSUE

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INTRODUCTION

In the history of civilization, people have continuously tried to control their environment and to find ways of teaching themselves and their children better means of acquiring new skills and capabilities. Commonsense notions of the ways that reward and punishment can change behavior have existed since time immemorial. Thus, elements of what is now referred to as behavior modification were used long before psychologists and other behavioral scientists developed systematic principles of learning.

As behavior modification procedures are used ever more widely, many different concerns have been expressed. On the one hand, the public and mental health professionals are concerned about whether behavior modification procedures are sufficiently well demonstrated through research for these procedures to be generally recommended and widely disseminated. On the other hand, behavior modification has acted as a conceptual "lightning rod" in the midst of stormy controversies over ethical problems associated with attempts at social influence, drawing to it such highly charged issues as fear of "mind control" or concerns about the treatment of persons institutionalized against their will. Apparent or actual infringements of rights, as well as some abuses of behavioral procedures, have led to litigation and calls for curbs on the use of behavior modification.

Everyone tries continually to influence his own and others' behavior, so that the individual using behavior modification procedures is distinctive only in that he is attempting to influence behavior more systematically. Commenting on this issue, one attorney has said that to be opposed to behavior modification is to be opposed to the law of gravity. Rather, the key issue is what sort of care, caution, and control should be exercised when behavioral principles are applied precisely and systematically.

This report is intended to provide an objective overview of the history and current methods of behavior modification and to review some critical issues, in an effort to aid the reader in differentiating between warranted and unwarranted concerns. We will also make some suggestions regarding ethical standards and practices.

What Is Behavior Modification?

To understand behavior modification, it is helpful first to clarify its relationship to a broader concept, behavior influence.

Behavior influence occurs whenever one person exerts some degree of control over another. This occurs constantly in such diverse situations as formal school education, advertising, child rearing, political campaigning, and other normal interpersonal interactions.

Behavior modification is a special form of behavior influence that involves primarily the application of principles derived from research in experimental psychology to alleviate human suffering and enhance human functioning. Behavior modification emphasizes systematic monitoring and evaluation of the effectiveness of these applications. The techniques of behavior modification are generally intended to facilitate improved self-control by expanding individuals' skills, abilities, and independence.

Most behavior modification procedures are based on the general principle that people are influenced by the consequences of their behavior. The current environment is believed to be more relevant in affecting the individual's behavior than most early life experiences or than enduring intrapsychic conflicts or personality structure. Insofar as possible, the behaviorally oriented mental health worker limits the conceptualization of the problem to observable behavior and its environmental context, rather than including references to hypothesized internal processes such as traits or feelings.

In professional use of behavior modification, a contractual agreement may be negotiated, specifying mutually agreeable goals and procedures. When the client is an adult who has sought therapy, the contract would be between him and the mental health worker. When the behavior modification program is to benefit a mentally disadvantaged group, such as the retarded, senile, or psychotic, the contract is often between the individuals' guardians or other responsible persons and the mental health worker. Parents, who usually make decisions affecting their young children, generally are consulted by the mental health worker regarding treatment for their children. Who the appropriate person is to make the contractual agreement for a prisoner is a complex and unsettled issue, taken up later in this report in con-

nection with the discussion of the use of behavior modification procedures with prisoners.

Behavior therapy is a term that is sometimes used synonymously with behavior modification. In general, behavior modification is considered to be the broader term, while behavior therapy refers mainly to clinical interventions, usually applied in a one-to-one therapist-patient relationship. That is, behavior therapy is a special form of behavior modification.

Behavior modification typically tries to influence behavior by changing the environment and the way people interact, rather than by intervening directly through medical procedures (such as drugs) or surgical procedures (such as psychosurgery). Thus, behavior modification methods can be used in a broad range of situations, including the child-rearing efforts of parents and the instructional activities of teachers, as well as the therapeutic efforts of mental health workers in treating more serious psychological and behavioral problems. The effects of behavior modification, unlike the results of most surgical procedures, are relatively changeable and impermanent.

Behavior modification procedures require that the problem behavior be clearly specified. That is, the mental health worker must be able to define objectively the response that the service recipient wants to learn or to have reduced. Thus, certain kinds of problems treated by dynamic psychotherapy are simply not appropriate candidates for behavior modification. In particular, the patient who seeks therapy because of an existential crisis—"Who am I? Where am I going?"—is not an appropriate candidate for behavior modification. This quasi-philosophical problem does not lend itself to an approach that deals with specific identifiable behavior in particular environmental contexts. It is possible that a patient who describes his problem in this way actually has some specific behavioral deficits that may underlie his existential difficulties or occur alongside them. Whether a careful behavioral analysis of the patient's difficulties would reveal such deficits is not now known, however.

While it has been alleged that secret, powerful psychotechnological tools are being or would be used to control the masses, researchers in behavior modification point out that they have encouraged the dissemination of information about behavior processes. In fact, workers in this area believe that increased knowledge will help people to understand social influence processes in general and actually would enable them to counteract many attempts at control, if such attempts occurred. Many persons using behavior modification methods not only evaluate the effectiveness of their procedures, but also measure the consumers' satisfaction with the behavior modification program used.

Is behavior modification merely common sense? Many persons who learn about the general procedures of behavior modification say that they seem to be nothing more than common sense. To some considerable extent, this is true. For example, parents are using these techniques whenever they praise their children for good report cards in the hope of encouraging continued interest and application. On the job, promotions and incentive awards are universally accepted as ways of encouraging job performance. The very structure of our laws, with specified fines, penalties, and the like, is intended to modify behavior through aversive control.

Behavior modification, however, like other scientific approaches, imposes an organization on its subject matter. While common sense often includes contradictory advice (both "out of sight, out of mind," and "absence makes the heart grow fonder"), the principles of behavior modification codify and organize common sense, showing under what conditions, and in what circumstances, which aspect of "common sense" should be applied. The mothers and grandmothers who use what could be described as behavior modification procedures may often do so inconsistently, and then not understand why they have failed.

What behavior modification is not. As more publicity has been given to this approach, the term "behavior modification" has come to be used loosely and imprecisely in the public media, often with a negative connotation. Thus, behavior modification has sometimes been said to include psychosurgery, electroconvulsive therapy (ECT), and the noncontingent administration of drugs, that is, the administration of drugs independent of any specific behavior of the person receiving the medication. However, even though procedures such as these do modify behavior, that does not make them "behavior modification techniques," in the sense in which most

professionals in the field use the term. In this report, the use of the term "behavior modification" will be consistent with its professional use; that is, behavior modification will be used to refer to procedures that are based on the explicit and systematic application of principles and technology derived from research in experimental psychology, procedures that involve some change in the social or environmental context of a person's behavior. This use of the term specifically excludes psychosurgery, electroconvulsive therapy, and the administration of drugs independent of any specific behavior of the person receiving the medication.

HISTORY OF BEHAVIOR MODIFICATION

Even though behavior modification is new within the behavioral sciences, the basic experimental work designed to obtain a precise understanding of the principles of learning dates back at least 75 years. Pavlov's first book, *Work on the Digestive Glands,* was published in Russian in 1897. Since then, those initial studies have been followed up with extensive laboratory experiments on learning in both animals and humans. It is on this broad foundation of experimental research that behavior modification principles are based.

The clinical use of behavior modification has a somewhat shorter history, since reports in the scientific literature of such applications have occurred mainly within the past 15 years, although some work was done as early as the 1920s and 1930s (e.g., Jones 1924; Mowrer and Mowrer 1938). Building on animal research by Skinner and his students, the pioneering work of Lindsley (Lindsley and Skinner 1954) and Ferster and DeMyer (1961) demonstrated that the behavior of even such severely disturbed individuals as adult psychotics and autistic children actually followed the same psychological laws as that of normal persons. Wolpe (see, e.g., 1958), working from a more neurophysiologically based theory, developed the method of systematic desensitization, a technique for treating neurotic behavior patterns. Psychologists and psychiatrists in England (Shapiro 1961; Eysenck 1952) also contributed to the early growth of behavior modification.

Once these and other researchers had shown that the principles of learning applied to severely disturbed persons, the development of the field of behavior modification began to accelerate. On the whole, applied researchers have found that the principles developed in laboratory research can be applied effectively to many behavior problems in the real world.

Behavioral treatment interventions were first used with regressed psychotics and neurotic adults (Ayllon and Michael 1959; Ayllon and Azrin 1965; Wolpe and Lazarus 1966). Extensive clinical work has shown that behavior therapy techniques can be effective in eliminating many incapacitating neurotic fears, such as fear of flying in planes. Behavior therapists working with regressed psychotics have been able to develop a variety of adaptive behaviors in these patients so that the patients' lives were enriched by the availability of many new choices (e.g., Ayllon and Azrin 1968).

From these beginnings, the field of behavior modification has expanded to new clinical populations and new settings, including delinquents in halfway houses, the retarded, preschool and deaf children, and drug abusers. Some autistic children, who might otherwise be continuously restrained in straightjackets because of their attempts at severe self-mutilation, have been helped by properly designed (e.g., Lovaas et al. 1973). Severely retarded children programs to control their own behavior effectively previously considered incapable of any learning other than the most basic, have, in some instances, been shown capable of acquiring some intellectual skills (e.g., Baer and Guess 1971). Delinquents who would otherwise have been incarcerated at great cost to themselves and to society have often been successfully helped in behaviorally oriented community settings, their own homes, and schools (e.g., Phillips et al. 1971). Some of the drug abusers who have chosen abstinence as a goal have been helped to attain this objective and carry on a normal life without opiates (e.g., Thomson and Rathod 1968).

A large amount of behavior modification research has been done with normal children, including research on improving classroom management, teaching methods, and parent-child relations. Children whose behavior is only mildly maladaptive can be treated by their parents or teachers, because behavior modification lends itself to use by persons not professionally trained in therapy. Most recently, be-

havior modification has been extended to social problems such as the facilitation of cooperative living in a public housing project, decreasing littering, encouraging the use of public transportation, and enabling unemployed persons to find jobs.

Behavior modification procedures are now used by psychologists, psychiatrists, educators, social workers, speech therapists, and members of other helping professions.

CURRENT PRACTICE OF BEHAVIOR MODIFICATION

Behavior modification is a family of techniques. The diverse methods included under the general label have in common the goal of enhancing persons' lives by altering specific aspects of their behavior. Ideally, the mental health worker and the service recipient decide together on a mutually agreeable set of treatment goals and on the means for attaining these goals. The service recipient or his representative should be kept fully informed of the results of the treatment as it progresses, and also participate in any modification of goals or techniques.

The initial analysis of the problem typically should begin with a detailed description of the behavior that is causing distress or interfering with optimal functioning of the individual in familial, social, vocational, or other important spheres of activity. The behavioral goals are to be viewed in the context of everything the person is able to do, and also in terms of what kinds of support his usual environment is capable of providing over the long term.

This description, whenever possible, should be based on observations of the individual in the setting in which he reports that he is distressed. These observations may be careful quantitative records, or they may be statements about the relative frequency of various behaviors. The person making the observations may be the therapist or his agent, a peer of the individual receiving the service, or the individual himself. For example, a parent might be trained to tally the frequency with which a child stutters, a teacher or hospital aide might keep a record of a child's aggressive outbursts, and a well-motivated individual can count the frequency of occurrence of an unacceptable habit such as nail-biting.

In addition to obtaining this description of what the individual does and does not do, the behavioral mental health worker should try to find how the individual's behavior relates to various events and places in his current and past experiences. Relevant for behavior modification are the events that immediately precede and that immediately follow the behavior. The goal should be to determine the circumstances under which the behavior seems to occur and the environmental consequences that might be maintaining it.

Behavior modification, then, involves the systematic variation of behavioral and environmental factors thought to be associated with an individual's difficulties, with the primary goal of modifying his behavior in the direction that, ideally, he himself (or his agent) has chosen.

Transition to the Nontreatment Setting

The goal of all treatment is the maintenance of improvement after the termination of therapy. The ideal behavior modification program would include a specification of the environment in which the individual normally would be living, and a provision for establishing and strengthening behavior desired or useful in that environment. Generalization to the natural environment is helped if the behavior modification program includes a planned transition between the therapeutic program and the natural environment. The following example illustrates this principle:

> O. Ivar Lovaas (UCLA) has been studying autistic children for a number of years.[1] He has found that when parents have been trained to carry on with a behavior modification program, children continue to improve after they have left his special treatment ward. On the other hand, the children regress if they are returned to institutions after leaving the ward, and no longer participate in a special training program.

Examples of Behavior Modification Methods

This section briefly describes some of the most common behavior modification methods. This is a young field, and other techniques are continually being developed and evaluated by clinical researchers. Thus, the methods included here should not be considered an exhaustive list.

Methods using positive reinforcement. Positive

reinforcement is a technical term that is roughly synonymous with reward. A positive reinforcer is defined as any event following a given response that increases the chances of that response recurring. Typical positive reinforcers include tangible items, such as money or food; social events, such as praise or attention; and activities, such as the opportunity to engage in recreation or to watch television. However, what is reinforcing or motivating for some people—what they will work for—is not necessarily reinforcing for others. As a result, when using behavior modification procedures with any individual, the mental health worker needs to determine what particular items and activities will reinforce that person's behavior at that time.

Methods that use positive reinforcement form the major class of methods among behavior modification techniques. In general, positive reinforcement is used to develop and maintain new behavior, and the removal of positive reinforcement is used to decrease the frequency of undesired behavior. Positive reinforcement has been used in teaching social behavior, in improving classroom management, in motivating better and faster learning of academic materials, in maintaining necessary weight loss, and in teaching new skills of all sorts.

> Positive reinforcement is being used to help disruptive underachieving children, in one research project.[1] Among a variety of procedures being used, teachers praise the children for appropriate behavior, and send home daily reports. The children's parents reward them for good daily reports. The researcher, K. Daniel O'Leary (State University of New York, Stony Brook), reports that the children's disruptive behavior has been reduced as a result of this program.

Although some positive reinforcers are much more effective if a person has been deprived of them for a while, others continue to be reinforcing virtually regardless of how often an individual is exposed to them. Thus, by carefully selecting reinforcers, it should not be necessary to deprive an individual beyond the natural deprivations that occur in daily life in order to be able to reinforce him positively.

One increasingly common use of positive reinforcement is in the group management procedure called a *token economy* (Ayllon and Azrin 1968). In a successful token economy program, the participants receive tokens when they engage in appropriate behavior, and, at some later time, exchange the tokens for any of a variety of positively reinforcing items and activities, just as money is used in society at large. Thus, the token economy is basically a work-payment incentive system. As such, it can be used with institutionalized persons to strengthen behavior that is compatible with that needed in the society at large, such as regular performance on a job, self-care, maintenance of one's living quarters, and exchange of currency for desired items.

One advantage of the token economy, given the limitation in professional manpower, is that nonprofessional personnel are typically the actual agents of therapeutic change. If therapeutic procedures are going to be extended to the many persons who require help, professional personnel must make increased use of those who are in direct contact with the persons requiring service. Those persons who can administer a token economy without special advanced training include nurses, aides, correctional officers, and friends and family members of the individual receiving the service. Such persons should, of course, receive appropriate professional supervision.

The early development of the token economy system took place almost exclusively in closed psychiatric wards. Token economies were found quite useful in preventing or overcoming the deterioration of normal social behavior, or what Gruenberg (1967) has called the "social breakdown syndrome," that accompanies prolonged custodial hospitalization, whatever the initial diagnosis. The token economy method is now being extended to acute psychiatric programs, to public school classrooms, and to classrooms for disadvantaged, hyperactive, retarded, and emotionally disturbed children (Anderson 1967; O'Leary and Drabman 1971). Such programs have also been used with delinquents and persons with character disorders to enhance educational achievement and to improve adjustment to military or civilian environments (Cohen and Filipczak 1971; Colman 1971). Tokens have been used to increase children's attention span and to improve self-help skills in retardates (e.g., Minge and Ball 1967).

In the behavior modification technique of *shaping*,

a desired behavior is broken down into successive steps that are taught one by one. Each of the steps is reinforced until it is mastered, and then the individual is moved to the next one. In this way, the new behavior is gradually learned as what the individual does becomes a closer and closer approximation of the behavioral goal.

New behavior can also be taught by means of *modeling*. In this method, a person who already knows how to engage in some desired behavior demonstrates it for the individual who is learning. For example, if a client were learning socially appropriate ways to greet members of the opposite sex, another person might demonstrate them for the client.

> The model demonstrating the appropriate behavior can be an actual one or an imaginary one. Alan E. Kazdin (Pennsylvania State University) is conducting a study of some facets of imaginary or covert modeling.[1] Subjects in his study are college students who have problems in assertiveness. They are taught to imagine one or several other persons engaging in the sort of assertive behavior that the subjects hope to learn, and then are tested to see how much their own assertiveness has increased.

In *contingency contracting*, the mental health worker and the client decide together on the behavioral goals and on the reinforcement that the client will receive when the goals are achieved. For example, a parent and child might agree that it would be desirable if the home were neater, specifically, if the child's playthings were appropriately stored after a certain time in the evening. The child might request that the parent agree to take him to a favorite activity after the child had put away his playthings for a specified number of days. A contract often involves an exchange, that is, each person entering into the contract agrees both to change his own behavior and to provide reinforcement for the changes that the other person makes. Such a mutual contract is frequently used in marriage counseling.

> The methods of contingency contracting are being studied by Henry M. Boudin (University of Florida) to see how they can be made effective for dealing with the special behavior problems characteristic of drug abusers.[2] The goal of this project is to reduce drug dependence in addicts who are being treated in an outpatient setting. The contracts made between the drug abusers and the therapists cover a large number of aspects of the addicts' lives. For example, an addict might agree to set up a joint bank account with his therapist, to which the addict deposits his own money. If a urine test indicates that he has broken his promise not to use illegal drugs, funds are taken from that account by the therapist and sent to some organization that the addict strongly dislikes. Contracts work both ways: If the therapist is late for an appointment with the addict or misses a therapy session, he can be required to deposit money to the addict's account. A contract involving positive reinforcement might specify that if the addict completes some amount of time on a job, he would receive a few movie passes or discounts on some number of phonograph records.

Aversive control. Some types of inappropriate behavior, such as addictions and certain sexual behaviors, appear to be maintained because their immediate consequences are naturally reinforcing for the individual. In such cases, aversive control techniques are sometimes used to combat long-term consequences that may be much more detrimental to the individual than the aversive methods themselves. Aversive methods are also used for behaviors that are life-threatening, such as severe self-mutilation.

In general, an aversive stimulus, that is, something that is unpleasant to the person, is used to help the person reduce his desire to carry out the inappropriate behavior (Rachman and Teasdale 1969). After aversive therapy, for example, a man who formerly became excited sexually only when thinking of women's shoes, might report that he had lost interest in the shoes. With aversive techniques, the aversive stimulus will not occur, that is, the individual is able to avoid it, as long as he does not perform the behavior that he and the mental health worker have agreed is undesirable. When aversive therapy is appropriately conducted, it is accompanied by positive reinforcement of normal behavior.

Perhaps the most commonly used aversive stimulus in behavior modification is a brief, low-level electric shock. This type of aversive stimulus has

been highly effective in ameliorating severe behavioral problems such as self-injurious behavior (see, e.g., Bucher 1969). When properly used, the shocks are very brief. Shock used this way causes no lingering pain or tissue damage and can be administered with precise control (Baer 1970). The use of shock as an aversive control procedure is entirely different from its use in electroconvulsive therapy, a procedure completely outside the scope of behavior modification.

A different type of aversive control method is the removal of positive reinforcement, such as a loss of privileges following a given behavior. This is a technique commonly used by American parents (Sears, Maccoby, and Levin 1957). One example of a technique involving the removal of positive reinforcement is the *time-out* procedure, in which an inappropriate behavior is followed by a period of brief social isolation.

> The time-out procedure is one of a number of behavior modification techniques being used in a study of preschool children with poor social, language, and cognitive skills.[1] The goal of the investigator, Donald M. Baer (University of Kansas), is to reduce these children's hyperactive and rebellious behavior. When a child engages in disruptive behavior, he is placed for a brief period in a small room adjoining the classroom. This aversive control for disruptive behavior is combined with a wide variety of positive reinforcing procedures for appropriate behavior. Positive reinforcers used in this study include attention, praise, access to preferred activities, and snacks.

Fines are another example of aversive control; fines require the individual to give up some positive reinforcement following an instance of inappropriate behavior.

One common use of aversive stimuli is in attempts to reduce excessive drinking by associating the drinking experience with an aversive stimulus. For example, recent research on alcoholism has employed electric shock as an aversive stimulus to teach the alcoholic patient to avoid continued drinking beyond a criterion blood alcohol level. This has reportedly been successful in helping problem drinkers learn to limit their intake to moderate levels typical of social drinking (Lovibond 1970).

> In research by Roger E. Vogler (Patton State Hospital and Pacific State Hospital, California), alcoholic persons being treated either in the hospital or as outpatients receive electric shock if they drink too much alcohol in a bar-like setting in the hospital.[3] Shock is also used to train the patients to discriminate when their blood alcohol concentration exceeds a specific level, and to teach them to drink slowly.

Drugs such as Anectine and Antabuse have also been used as aversive treatment for alcoholic persons (see section on Methods Using Drugs, below).

The other relatively common use of aversive stimuli is to control self-injurious and self-destructive behavior such as head-banging or tongue-biting. Such behavior can apparently be eliminated with a brief application of a strong aversive stimulus immediately after the response (Risley 1968; Bucher and Lovaas 1968).

> Occasionally, infants, young children, and some mentally retarded persons "ruminate," that is, they apparently voluntarily eject food from their stomachs into their mouths where it may be reswallowed or further ejected from their mouths. When this problem is severe, it can be life-threatening and may have serious detrimental effects on the physical, emotional, and social development of the child. Thomas Sajwaj (University of Mississippi) has developed a procedure using lemon juice as a mild aversive stimulus to control the ruminative behavior: when the infant or child regurgitates, a small amount of lemon juice is immediately squirted into his mouth by an attendant.[1] Preliminary results with a few children suggest that this aversive therapy eliminates the rumination, and that no other maladaptive behavior appears.

A consistent finding from research on aversive control is that the effects of the therapeutic use of aversive stimuli seem to be restricted to the particular behavior that is associated with the aversive stimulus, in that particular situation, with that particular therapist. That is, the effects of aversive stimuli do not seem to generalize very much (Risley 1968; Bucher and Lovaas 1968).

In contrast to the somewhat limited effects of aversive stimuli in controlling undesirable behavior, the positive side effects of this treatment seem to be

rather widespread. For example, it is commonly reported that once the use of aversive stimuli has eliminated a patient's self-injurious behavior, he avoids people less and is more responsive to other therapy aimed at teaching him adaptive responses.

While the effects of aversive stimuli may, in many cases, be only temporary, the individual will not make the undesirable response for at least some period of time. During that time, he is more amenable to learning new, appropriate responses. On the whole, research suggests that the most effective way of eliminating inappropriate behavior is to follow it with aversive stimuli, while at the same time positively reinforcing desired behavior. If the environment then continues to support the new, desired responses, the inappropriate behavior will soon cease to occur. Since the aversive stimuli are used only following inappropriate behavior, they will no longer be administered. The effects of the initial aversive control will, however, be lasting, because the individual will now have learned to make appropriate responses.

It is important to note, however, that in the absence of rewarded alternatives, the response that had been suppressed by an aversive technique is likely to recur. To ensure that it does not, the individual being treated should learn behavior that will be maintained by rewards that occur naturally in his environment. In some instances, simply stopping the undesirable behavior enables the individual to get natural rewards. For the "ruminating" child, for example, stopping the ejection of food in itself allows proper digestion of food, greater comfort, and normal eating, growing, and developing. In addition, the infant is now more receptive to normal learning experiences.

Overcorrection. Overcorrection is a behavior modification method combining positive reinforcement and aversive control that is used to discourage inappropriate or disruptive behavior. In this procedure, the person who has engaged in the inappropriate behavior not only remedies the situation he has caused, but also "overcorrects" it. That is, the person is required to restore the disruptive situation to a better state than existed before the disruption. For example, a violent patient in a mental institution who overturns a bed in a dormitory might be required not only to right that bed and make it up again, but also to straighten the bedclothes on all the other beds in that dormitory. Making up the bed that was overturned corrects the situation that the violent behavior disrupted; making up all the other beds is, then, an "overcorrection."

Often an inappropriate or disruptive behavior has been receiving some sort of reinforcement. For example, stealing results in the thief acquiring goods he desires; turning over a bed might get a patient attention and concern from an otherwise busy ward staff. Thus, one function of the overcorrection procedure is to terminate any such reinforcement associated with the inappropriate behavior: the thief must return the stolen goods, for example.

Moreover, overcorrection is an aversive stimulus, because it requires effort to complete the overcorrection, and because the person cannot be engaging in other behavior while he is completing the overcorrection task. In addition, the overcorrection procedure itself may often be educative, in that the process of restoring the original situation generally requires the individual to engage in appropriate behavior.

Overcorrection has been a particularly effective technique in eliminating aggressive and disruptive behavior in institutionalized patients (Foxx and Azrin 1972; Webster and Azrin 1973). One of the advantages of overcorrection over other methods for dealing with these problems is that severe aversive stimuli may not be involved in overcorrection.

Systematic desensitization. Gradual, progressive exposure to feared situations has long been advocated as a means of eliminating or reducing maladaptive anxiety or avoidance behavior. In systematic desensitization, the exposure is preplanned in graduated steps. In general, this procedure involves teaching the patient to relax, and then having him imagine or actually encounter increasingly disturbing situations. The patient usually does not move on to a more disturbing item until he can remain deeply relaxed with a less disturbing one. Recent research, however, has suggested that some degree of forced exposure can also be effective in reducing fears.

If a patient is afraid of heights, for example, the therapist works together with the patient to develop a list of increasingly fearful situations. For example, the patient might say he is very afraid of looking out from the top of the Empire State Building, but hardly afraid at all of climbing a small ladder. He then is trained to relax, and the therapist asks him

to imagine each of the series of situations, starting with the one he is least afraid of, the one arousing little or no tension or fear. Over a series of therapy sessions, the patient will be exposed systematically to the whole list of fearful situations, and, at the end of treatment, will be able to maintain his relaxed state even while imagining scenes that were initially extremely fearful. Patients are usually encouraged to try out their newly learned ability to relax in the face of the formerly fearful situation outside of the therapy setting. Generalization of the effects of systematic desensitization from the treatment setting to real life is typically found, especially when the patient has done the "homework" of gradually facing what used to be fearful.

Systematic desensitization has been used clinically by behavior therapists to treat unreasonable fears, frigidity, insomnia, interpersonal anxiety, and other clinical problems in which anxiety is a core problem.

> Systematic desensitization is being used with a variety of problems. For example, Thomas L. Creer (Children's Asthma Research Institute and Hospital, Denver) has demonstrated the effectiveness of systematic desensitization in the treatment of children's asthma.[1] As a result of the treatment, the children learned to be less afraid of having asthma attacks and used significantly less medication. Desensitization is also being used as a treatment for insomnia (Richard R. Bootzin, Northwestern University)[1] and as a component of treatment for marital sexual dysfunction (Joseph LoPiccolo, State University of New York, Stony Brook).[1]

Assertive training. When a person fails to stand up for his rights in an appropriately firm manner, he may not have acquired appropriate assertive behavior, or he may not be engaging in behavior that he actually knows how to do. Similarly, persons who do not express positive feelings in appropriate situations also may lack appropriate assertive skills or an appreciation of the situations in which those skills should normally be used.

Assertive training is taught by a combination of methods, including modeling of appropriate behavior by the therapist or some other person, and reinforced practice by the patient. The overall goal of this type of behavior therapy is the alteration of the patient's interpersonal interactions.

Methods using drugs. On the whole, behavior modification procedures emphasize environmental manipulation. However, drugs have occasionally been used as an integral part of a behavioral treatment, either following a particular behavior, or as an adjunct to a behavioral program.

A few case studies in the literature report the use of drugs as aversive stimuli, when the therapist was attempting to reduce some inappropriate behavior. For example, succinylcholine chloride (Anectine) was given to one individual who had a severe dependency on sniffing various substances such as airplane glue. In the treatment, the patient sniffed one of these substances and was immediately injected with Anectine, which produces an extremely unpleasant sensation of drowning and suffocating. The treatment was conducted under the supervision of an anesthesiologist. After this treatment, the patient refrained from sniffing the substance that had been associated with the Anectine (Blanchard, Libet, and Young 1973).

Anectine, and emetic drugs such as Antabuse, have also been used as aversive treatment for alcoholic persons, although the evidence suggests that they are not strongly effective treatments.

When drugs are used as part of an aversive control program in behavior modification, they must take effect immediately after the occurrence of a specific inappropriate behavior. This temporal relationship between the behavior and the aversive action of the drug is considered to be an essential aspect of the therapy. As noted later in this paper, giving aversive drugs independently of a person's behavior is not behavior modification, in the sense in which we are using that term.

Drugs are also sometimes used to facilitate the progress of a behavioral program. Brevital is a drug that enhances relaxation. Some practitioners who do systematic desensitization give their patients small doses of Brevital, if the patients are otherwise having trouble learning to relax in the therapy sessions (Brady 1966). Usually the dosage level of the drug is gradually adjusted so that the patient soon relaxes without the assistance of the drug.

EVALUATION OF BEHAVIOR MODIFICATION

Collecting evidence that would show whether be-

havior modification is effective is not as easy as it would seem. Several conceptual issues first need to be resolved. In order to evaluate behavior modification, the types of problems for which it is appropriate must be delimited, suitable outcome measures must be selected, and appropriate comparison conditions must be chosen.

While therapists who use behavior modification feel that it is appropriate for a wide range of problems, other persons have questioned the appropriateness of a behavioral approach to many mental health problems because of their belief that the therapy for a particular problem must direct itself to the root cause of the problem. In that view, disorders of biological origin should be treated with biologically based principles, while those of psychological origin should be treated psychotherapeutically.

A substantial body of opinion insists that there need not be a relationship between the etiology of a problem and the nature of the treatment that is effective in ameliorating it (Birk et al. 1973; London 1972). A disorder with an organic or neurophysiological etiology may be responsive to a biological therapy, but it may also be markedly improved by one of the procedures based on behavior modification. Similarly, difficulties that have an environmental origin may be responsive to biological intervention, such as psychopharmacologic treatment, as well as to a behavioral treatment. Behavior modification is based on learning principles, and so is particularly suitable for those problems, whatever their etiology, where the appropriate treatment involves retraining or learning new skills.

Therapists who use behavior modification methods would choose an objective, preferably quantifiable, measure of behavior as the outcome measure for evaluating the efficacy of treatment procedures. This selection contrasts with the outcome measures preferred by classical psychodynamically oriented therapists, who feel that personality tests reflect the changes that they seek to achieve in therapy. These psychotherapists may, in fact, regard as "mere symptoms" what the behaviorally oriented therapists regard as the focus of treatment. One of the consequences of this difference in viewpoints is that it is extremely difficult to obtain general agreement on a set of outcome measures for a comparison of the effects of behavior modification and psychotherapy.

The ideal evaluation of the effectiveness of behavior modification would tell us whether behavioral procedures bring about improvement more often, more quickly, to a greater degree, longer, or at less cost than do alternative procedures, such as psychotherapy. Unfortunately, at least in part because of the difficulty in obtaining agreement among professionals on what constitutes "improvement," this sort of direct comparison has been made systematically in only a few studies.

Despite the conceptual problems in making comparisons of different kinds of treatments, however, researchers have recently begun to conduct comparative evaluations in which one group of individuals receives a standard, well-accepted treatment, conscientiously applied, while another receives some kind of behavior modification, again conscientiously applied. This kind of research is aimed at answering the important questions of relative therapeutic efficacy and cost-effectiveness. By comparing results obtained on a variety of outcome measures with existing, standard procedures and with behavior modification, researchers will begin to provide the evidence necessary for deciding whether the costs of introducing new procedures, training staff in those procedures, and making changes in supervision and record-keeping, will be adequately repaid with a significant improvement in the functioning of the persons treated.

Although few comparisons have been made of behavior modification with other forms of treatment, large numbers of case studies and systematic evaluations of behavior modification have been reported in which the researchers have shown experimentally that the behavior modification methods were responsible for the improvements obtained. To summarize these many reports briefly, behavior therapy has been shown to be effective with some persons suffering from unjustified fears, anxiety reactions, and stuttering. Problems that have shown some improvement when individuals have been treated by behavior therapy procedures include compulsive behavior, hysteria, psychological impotence, frigidity, exhibitionism, and insomnia.

Behavior modification procedures have been used to analyze and produce significant changes in the language of institutionalized retardates who were initially deficient in language skills. Control of self-destructive and self-mutilating behavior has been achieved in a number of cases through behavior

modification, as has the elimination or great reduction of milder forms of disruptive behavior, such as tantrums, whining, screaming, fighting, and destruction of property. Positive behaviors developed in institutionalized persons with behavior modification procedures include proper eating techniques and the complete range of self-care skills frequently absent in such persons. In otherwise normal preschool children, behavior modification has been used to facilitate the development of those motor, social, and cognitive skills thought especially appropriate to the preschool environment, yet not appearing in the normal course of events in that setting. For example, social isolates have acquired social skills, and silent children, a readiness to speak. Hyperactive children have been taught to attend to tasks, and predelinquents have been taught friendly speech and have learned to perform skills necessary for school achievement, to take appropriate care of their living quarters, to interact cooperatively with their families, and to stop stealing and aggressive behavior (Baer 1973).

Token reinforcement systems have been shown to be effective in many classrooms for modifying behavior problems such as classroom disruption, failure to study, and low academic achievement. Chronic mental patients on wards throughout the country have learned a wide variety of appropriate social behaviors after the introduction of a token economy. The token economy has recently been introduced in a few nursing homes and wards for senile patients, and the early results appear promising. When the behavioral program is in effect, the patients come to interact more with each other and engage in more activities. Studies have shown that careful implementation of behavioral techniques can often produce improvements in the verbal and nonverbal behavior of psychotic and schizophrenic children.

Behavioral treatments have been quite successful with toilet training and most nervous habits, but somewhat less successful with alcoholism, smoking, and tics other than in a few special cases. To the extent that the symptoms of asthma are maintained by environmental consequences, the number and severity of asthmatic attacks can be reduced by behavioral programs designed to rearrange those consequences. Systematic desensitization has also been effective with some asthmatics (Price 1974).

Overall, then, much more evaluative research needs to be done with the behavioral treatments, although they do show considerable promise. With many clinical problems, behavioral procedures have been used only on a few individual cases, so that experimental evidence is lacking for the efficacy of the specific methods used. Thus, while a great range of problems appears to be responsive to behavioral treatment, for many types of problems, validating data are yet to be obtained. The existing evidence is strong enough, however, that an expert task force of the American Psychiatric Association recently concluded that behavior therapy and behavior principles employed in the analysis and treatment of clinical phenomena "have reached a stage of development where they now unquestionably have much to offer informed clinicians in the service of modern clinical and social psychiatry" (Birk et al. 1973).

CURRENT BEHAVIOR MODIFICATION PROGRAMS: ADAMHA

The Alcohol, Drug Abuse, and Mental Health Administration (ADAMHA) is supporting behavior modification research in a wide variety of areas; the amount of that support exceeds $3 million a year, out of a total of over $121 million spent on research. Behavior modification research being conducted with ADAMHA support covers a wide range of problems and populations. Research is being done on the behavioral problems of children and adults, on persons with mild behavior problems and quite severe ones. Researchers are attempting to develop better behavioral techniques for dealing with asthma, insomnia, and hypertension, as well as evaluating new child-rearing techniques and classroom management methods. Behavioral treatments for problems of alcoholism, drug addiction, and juvenile delinquency are also being studied.

Many current projects have been described above as examples of specific behavior modification procedures. A few other projects will be described here, as further indication of the range and scope of support currently being provided.

Montrose M. Wolf, Elery L. Phillips, Dean Fixsen, and others (University of Kansas) have developed a halfway house for predelinquent adolescents that uses procedures of behavior modification. This halfway house, called Achievement Place,

is a community-controlled, community-based, family-style residential home for six to eight adolescents who have typically been adjudicated there by the juvenile courts. The program is designed to provide a maximum amount of motivation and instruction to the youths when they first enter, and then, as they develop skills and self-control, to reduce the amount of structure, replacing it with more natural reinforcement conditions. Behavior modification procedures include a token economy; positive reinforcement to shape appropriate social, academic, prevocational, and self-care behavior; and fines for inappropriate behavior. In addition, the adolescents' parents are trained in child management procedures so that the parents can be more successful in guiding their children toward productive lives.

Preliminary findings indicate that Achievement Place youths progress far better than do comparable youths placed on probation or sent to a State training school. This model has been copied widely, and there are now more than 30 such homes in operation in eight States, supported by State and local funds.

Nathan H. Azrin (Anna State Hospital, Illinois) has developed an extensive life-intervention scheme for alcoholic persons, based on behavior modification principles.[4] In this treatment program, vocational, family, and other social reinforcers are rearranged so that the alcoholic person learns new behavior patterns incompatible with drinking. The clients are given marital and job counseling and are introduced to alcohol-free social situations especially established for them. The effectiveness of this treatment package is being compared with that of existing hospital procedures.

A. J. Turner is receiving support for a project in which behavior modification procedures are being used in all possible service areas of the Huntsville-Madison County (Alabama) Mental Health Center.[5] The results obtained on a wide variety of measures administered to the patients in this center are being compared with results on the same measures obtained from patients in a comparable community mental health center that uses standard procedures. Thus far, the experimental community mental health center has reported a much greater decline in State hospitalizations from their catchment area than that shown by comparable counties, as well as decreases in other measures, such as average number of days in the hospital.

CRITICAL ISSUES IN BEHAVIOR MODIFICATION

Recently, concerns have been widely expressed over the ethical and legal aspects of behavior modification techniques.

The Fear of Control

Some people fear behavior modification and control because of prevalent contemporary attitudes of distrust and skepticism of authority in general, and "mind control" in particular; others have more specific concerns that are related to the practice of behavior modification or, often, to myths and misconceptions about the practice of behavior modification.

General concerns about control. Behavior modification is most often criticized when it is used to alter the behavior of persons who are involuntary participants in therapy. Involuntary patients or subjects include those who are disadvantaged, vulnerable, or powerless because of institutionalization, age, social position, or discrimination.

Perhaps the most frequent complaints are in connection with the treatment of hospitalized mental patients and institutionalized delinquents and criminals. There has been a growing sensitivity to the ambiguity that can underlie diagnosis and choice of treatment goals for these populations. According to this view, a thin line separates social deviance from a mental illness that requires hospitalization. Society can often find it more convenient to institutionalize the deviant individual than to deal with the problem he represents. The hospitalization or incarceration thus may be more in the interest of social control than in the interest of the person's welfare.

The growing distrust of the exercise of control over the helpless and the disadvantaged even challenges the legitimacy of the authority of those who attempt to treat these persons. The authority to treat the institutionalized mentally disordered, for example, has been eroded by the growing dissemination of the notion that mental "illness" is a myth. According to this view, people should accept responsibility for their own behavior, including behavior that might otherwise be termed "mentally ill." Further, an emerging sociological model views the mentally disordered patient as a victim of stresses and strains

that reside primarily within the social structure, rather than within the individual.

Credence has been increasingly given to the picture of the mental patient as a victim who is hospitalized for the convenience of society. In that view, treatment is seen as either a form of punishment or a procedure designed to make the patient conform to the requirements of an oppressive society. The mental health worker who proposes to modify the patient's behavior thus can be seen as serving the interests of the oppressor, rather than favoring the right of the person to express his individuality.

The news media, popular books, and movies have given voice to these general concerns. Also, several organizations have, in the last few years, called conferences to explore these issues. For example, the Institute of Society, Ethics, and the Life Sciences, of the Hastings Center (Hastings-on-Hudson, New York), held a series of meetings between 1971 and 1973 in which leaders in mental health research, practice, and public policy explored the problems of behavior control by drugs, the media, and physical manipulation of the brain, and discussed issues relating to the use of behavior control in education and in total institutions such as prisons and mental hospitals. The Institute has released reports summarizing these discussions.

Specific fears of behavior modification. The general concerns mentioned above are relevant to all types of psychotherapy, as well as to behavior modification. In addition, people have expressed other concerns that are more specific to behavior modification procedures.

Behavior modification has been criticized with respect to its theoretical foundation, its goals, and its methods. Some mental health professionals have attacked behavior modification on the grounds that its underlying assumptions are at variance with their basic values and tend to dehumanize man (see, e.g., Carrera and Adams 1970). Contingency contracting, for example, has been said to foster a manipulative, exchange orientation to social interaction, and token economies, an emphasis on materialistic evaluation of human efforts. Mental health professionals, including persons with a behavioral orientation, have also questioned the appropriateness of accepting a patient's definition of his own problem, on the grounds that the patient's self-attribution of deviance can, like his other behavior, be seen as learned behavior that is a function of consequences provided by society (Davison 1974; Begelman, in press).

Another type of concern about the goals of behavior modification was expressed in a detailed law review critique which argued that behavior modification could be used to impose "an orthodoxy of 'appropriate conduct'" on the community (Heldman 1973), and thus to silence social and political dissent. Extremist activist organizations have described the procedures of behavior modification as "crimes against humanity."

The media and literature have incorrectly linked behavior modification with techniques such as psychosurgery, chemotherapy, electroshock, and brainwashing. The fantasied potency of imaginary or untested mind-controlling techniques, popularized in such works as *Brave New World*, *1984*, *The Manchurian Candidate*, and *A Clockwork Orange*, has been extended to encompass standard, carefully evaluated behavior modification techniques.

Further, procedures that are encompassed within behavior modification can be misused. When this happens, critics decry behavior modification, even though the misuse is such that the procedure can no longer accurately be called "behavior modification." For example, Anectine, a drug that produces the sensation of drowning or dying, and Antabuse and other emetic drugs, have occasionally been used as components of behavior modification procedures. In aversive therapy for problems such as glue-sniffing and alcoholism, such drugs may be used as the aversive stimulus. However, these drugs have also been seriously misused, especially in prison settings, where they are given to persons in retribution for real or imagined lack of "cooperation" on their part, or as a way of keeping recalcitrant persons "in line." The noncontingent use of drugs lies outside the purview of behavior modification.

A perspective on the issue of control. Like any technology, behavior modification can be used ineptly, or for ends that could be considered immoral. The technology of behavior modification, says Skinner (1971), "is ethically neutral. It can be used by villain or saint. There is nothing in a methodology which determines the values governing its use" (p. 150). When psychoanalytic therapy was first introduced, it too raised the spectre of unethical authoritarian control. It is likely that any approach

to the alteration of human behavior raises these same questions.

In the view of persons working in the field of behavior modification, it is the nature of social interaction for people to influence each other. In other words, behavior is continually being influenced, and it is inevitably controlled. Therapy without manipulation is a mirage that disappears on close scrutiny (Shapiro and Birk 1967). That is, in all kinds of therapy, the therapist hopes to change the patient in some way. Bandura (1969) formulates the issue in this way: "The basic moral question is not whether man's behavior will be controlled, but rather by whom, by what means, and for what ends." Behavior modification, then, involves altering the nature of the controlling conditions, rather than imposing control where none existed before.

Behavior modification is not a one-way method that can be successfully imposed on an unwilling individual. By its very nature, behavior modification will succeed only when the individual who is receiving the consequences is responsive to them and cooperates with the program. If the environmental events following an individual's behavior are not reinforcing to him or are less reinforcing than some alternative, his behavior will not change. Similarly, if the aversive consequence that follows his behavior is less unpleasant to him than some alternative, his behavior will not change. For many persons, it is highly reinforcing to be resistant to attempts to alter their behavior and highly aversive to succumb to external control. Even though such an individual may be participating in a behavior modification program, the person conducting the program may not be able to find any consequence strong enough to compete with the individual's desire to remain unchanged. Thus, in the long run, each of us retains control over his own behavior.

This characterization is equally true, whether the persons in the behavior modification programs are voluntary, adult, clinic patients, or institutionalized individuals with senile psychotic syndrome. Even for the latter group of persons, environmental consequences will succeed in altering their behavior only if the new consequences are more reinforcing than some alternative. Because mentally disadvantaged groups, such as the senile, often are in settings lacking an array of alternative reinforcers, special care needs to be exercised in developing programs for them. Later in this paper, some procedures are suggested that might help protect disadvantaged groups from inappropriately designed programs.

Although aversive therapy procedures seem more coercive than those using positive reinforcement, the individual still must cooperate fully with the procedures in order for them to be effective. While aversive procedures may reduce the individual's motivation to engage in the undesirable behavior, the motivation probably will not be reduced to zero. Rather, the goal of the therapy generally is to reduce the motivation to the point where the individual is able to exercise self-control and avoid engaging in the undesirable behavior.

Recent fiction has dramatically portrayed individuals supposedly unable to overcome the effects of aversive therapy. This, however, is not realistic. If coercion is used in therapy—whether positive or aversive—that may indeed force the individual's cooperation for a time. But, in real life, once this coercion is removed, the individual will be able to return to his former ways if he is motivated to do so.

It is important to remember that in addition to its emphasis on environmental control, the behavioral approach also assumes that persons are able to learn behavioral principles and understand how environmental events can control their own behavior (Ulrich 1967). As behavioral principles are more widely disseminated, an increasing number of persons will have access to them. Hopefully, through the knowledge that people gain from discussions of behavioral principles in courses, workshops, articles in the public press, television "talk shows," and other such sources, they will have a better understanding of their own behavior.

As public awareness increases, the likelihood of behavior being manipulated by more knowledgeable individuals lessens. Just as a professional in behavior modification may use his understanding of behavioral principles in an attempt to alter other persons' behavior, so those other persons can make use of their own understanding and control of themselves and their environment to resist, or indeed to counter-influence the behavior of the professional. The behavior influence process is always a reciprocal one: The behavior manager attempts to shape the behavior of some other person through changing the consequences of that person's behavior, but, at the

same time, the manager's behavior is in turn shaped by the other's response. Control always results in countercontrol.

In the ideal situation, the mental health worker using behavioral procedures would plan the goals and methods of the therapy together with the client. Persons using behavioral approaches would follow the same generally accepted ethical principles guiding other therapists, and so would strive to maintain a suitable balance between the rights of individuals and of society.

Thus, when there is controversy over the application of behavior modification, it often seems to be in instances in which these ideal conditions have not, for some reason, been met. One important benefit of the public attention to and criticism of behavior modification has been increasing sensitivity on the part of all mental health workers to issues that were formerly often neglected. For example, many therapists are only recently becoming aware of the need to involve the client or his representative more realistically in the planning of the treatment program, including the selection of both goals and methods. In the past, the mental health worker often used simply his own clinical judgment and experience as the basis for determining treatment goals and methods.

Also, the significance of the imbalance in power that is usually found between the therapist and the client is only now coming to be understood by mental health workers. Typically, the therapist comes from the more powerful classes or has a higher status within an institution, while the client is from a less powerful class or is of a lower status. In all mental health fields, including behavior modification, therapists have tended to view problems from their own perspective, so that treatment goals chosen were those that they would want for themselves or that would benefit those to whom the therapist had allegiance. In many instances, the inclusion of the client or his representative in the decisionmaking process is beginning to redress this imbalance. The power imbalance is a particularly serious problem, however, when the clients are involuntarily confined in an institution. Later in this report, the issues surrounding the use of behavior modification in prisons are discussed in detail.

On the whole, the goal of behavior modification, as generally practiced, is not to force people to conform or to behave in some mindless, automation-like way. Rather, the goals generally include providing new skills and individualized options and developing creativity and spontaneity.

Persons working in behavior modification have tried to be sensitive to the issue of control and to face the issue directly. Task forces on ethical issues in behavior modification have been established by each of the major professional societies whose members work in this field—the American Psychiatric Association, the American Psychological Association, and the Association for Advancement of Behavior Therapy. The first of these has published an extensive report (Birk et al. 1973).

In summary, people do fear control of their behavior, and they fear any method that seems to be effective in changing behavior. However, people need an understanding of what controls behavior and how behavior can be changed. Skinner (1971) has a thoughtful statement on this issue: "Good government is as much a matter of the control of human behavior as bad, good incentive conditions as much as exploitation, good teaching as much as punitive drill. . . . To refuse to exercise available control because in some sense all control is wrong is to withhold possibly important forms of countercontrol" (pp. 180-181). Dissemination of information about behavior modification methods will make techniques of resisting oppressive control generally available, so that new methods of control can be met by new methods of countercontrol (Platt 1972).

The Use of Aversive Control

Aversive procedures can be and have been seriously misused so that they become means by which a person in power can exercise control or retribution over those in his charge. The abusive treatment may then be justified by calling it therapeutic and labeling it "behavior modification."

A perspective on aversive control. While many behavior modification aversive techniques, such as shock and time-out, are effective, it is unfortunately true that they are also cheap and easy to apply, requiring little if any specialized knowledge on the part of the person using—or misusing—them. Further, aversive techniques are widely known to be included in the family of behavior modification methods. Thus legitimized, these simple aversive methods are

subject to indiscriminate use and other abuses, without regard for individual rights. For example, time-out, which appropriately used should be for only short periods of time, has, in some settings, involved extraordinarily long periods of isolation in small quarters.

Aversive techniques have been used successfully to eliminate life-threatening self-destructive behavior in clinical populations. Although the techniques themselves are unpleasant to consider, the gain from their use can be potentially great, especially when compared to the alternative, which may be long-term confinement in an institution or prolonged periods in total restraint. Thus, aversive techniques are appropriately used when the risk to the patient of continuing the self-injurious behavior is serious, alternative treatments appear to be ineffective, and potential benefits to the patient from the treatment are great. On the other hand, aversive methods should not be used to enforce compliance with institutional rules.

Suggested procedures. When aversive methods are used, appropriate safeguards should be included for the protection of the rights and dignity of those involved. Severe aversive methods, involving pain or discomfort, should be used only as a last resort, when the person's behavior presents immediate danger to himself or others, and when nonpainful interventions have been found to be ineffective. Aversive therapies should be conducted only under the surveillance of an appropriate review panel, preferably one including representatives of the group to which the person receiving the treatment belongs; and they should be used only with the continuing consent of the person receiving them, or of his representative. The person supervising the use of aversive methods should continually monitor the results, which should also be available to the review panel. Any method not providing significant help should be abandoned. The technique used should not violate generally accepted cultural standards and values, as determined by the review panel.

Behavior Modification in Prisons

Behavior modification has become an increasingly controversial yet important law enforcement tool. Many persons feel that the use of behavior modification in prisons conflicts with the values of individual privacy and dignity.

Persons using behavior modification procedures have been particularly criticized for their attempts to deal with rebellious and nonconformist behavior of inmates in penal institutions. Because the behavioral professional is often in the position of assisting in the management of prisoners whose antagonism to authority and rebelliousness have been the catalyst for conflict within the institution, the distinctions among his multiple functions of therapy, management, and rehabilitation can become blurred, and his allegiance confused. While the professional may quite accurately perceive his role as benefiting the individual, he may at the same time appear to have the institution, rather than the prisoner, as his primary client.

Frequently, the goal of effective modification in penal institutions has been the preservation of the institution's authoritarian control. While some prison behavior modification programs have been designed to educate the prisoners and benefit them in other ways, other programs have been directed toward making the prisoners less troublesome and easier to handle, adjusting the inmates to the needs of the institution.

A related problem is that in prisons as elsewhere, the term "behavior modification" has been misused as a label for any procedure that aims to alter behavior, including excessive isolation, sensory deprivation, and severe physical punishment. Behavior modification then becomes simply a new name for old and offensive techniques.

The question of voluntary consent is an especially difficult problem when the persons participating in a program are prison inmates (Shapiro 1974). It is not clear whether there can ever be a "real volunteer" in a prison, because inmates generally believe that they will improve their chances for early parole if they cooperate with prison officials' requests to participate in a special program. There are other pressures as well; for example, participation in a novel program may be a welcome relief from the monotony of prison life.

The use of behavior modification in the prisons came to national attention recently when the Law Enforcement Assistance Administration (LEAA) withdrew its support from some behavior modification programs. According to a spokesman for LEAA, this was done because the agency staff did not have the technical and professional skills to

screen, evaluate, or monitor such programs. The termination of the programs was criticized by the American Psychological Association (APA) as an injustice to the public and to prison inmates. The APA's news release (Feb. 15, 1974) said that the LEAA decision would tend "to stifle the development of humane forms of treatment that provide the offender the opportunity to fully realize his or her potential as a contributing member of society."

A similar point of view has been expressed by Norman A. Carlson, Director of the Federal Bureau of Prisons, in discussing the difficulty of determining which programs should be described as behavior modification: "In its broadest sense, virtually every program in the Bureau of Prisons is designed to change or modify behavior. Presumably, the Federal courts commit offenders to custody because their serious criminal behavior is unacceptable to society. The assumption is that during the period of incarceration, individuals will change their patterns of behavior so that after release, they will not become involved in further criminal activity." In general, when behavior modification programs are introduced in Federal prisons, it is important that they be consistent with this philosophy.

A perspective on the use of behavior modification in prisons. A major problem in using behavior modification in prisons is that positive programs begun with the best of intentions may become subverted to punitive ones by the oppressive prison atmosphere. Generally, behavior modification programs are intended to give prisoners the opportunity to learn behavior that will give them a chance to lead more successful lives in the world to which they will return, to enjoy some sense of achievement, and to understand and control their own behavior better. Unfortunately, in actual practice, the programs sometimes teach submission to authority instead.

Thus, critical questions in the use of behavior modification in prisons are how goals are chosen for the program and how continued adherence to those goals is monitored. Behavior modification should not be used in an attempt to facilitate institutionalization of the inmate or to make him adjust to inhumane living conditions. Further, no therapist should accept requests for treatment that take the form "make him 'behave,' " when the intent of the request is to make the person conform to oppressive conditions.

Currently, a common position is to recommend the elimination of behavior modification programs in prisons, on the grounds that such therapy must be coercive, since consent cannot be truly voluntary. However, before this drastic step is taken, careful consideration should be given to the consequences. If constructive programs were eliminated, it would deny the opportunity of improvement for those inmates who genuinely want to participate and who might benefit from the programs. It would seem far better to build in safeguards than to discard all attempts at rehabilitation of prison inmates, whether behavior modification or any other rehabilitative method is involved.

Suggested procedures. The appropriate way to conduct treatment programs in prisons, and, in fact, whether such programs should even be offered, are matters by no means settled. Because of the custodial and potentially coercive nature of the prison setting and the pervasive problem of power imbalance, special procedures are needed to protect the rights and dignity of inmates when they engage in any program, not only behavior modification. Some procedures are suggested here, in an attempt to add to the dialogue about ways to give prisoners the option of participating in programs and yet not coerce them into doing so.

A review committee should be constituted to pass on both the methods and goals of proposed treatment programs, and to monitor the programs when they are put into effect. The committee should be kept continually informed of the results of the programs, including short- and long-term evaluations, and of any changes in goals or procedures. A meaningful proportion of the members of this committee should be prisoner representatives, and the committee should also include persons with appropriate legal backgrounds. The person conducting the behavior modification program should be accountable to this committee, and ultimately, to all the individuals participating in the program.

As is always the case with such review panels, conflicting philosophies and differing loyalties may make it difficult for the panel members to agree unanimously on decisions. Such a panel does, however, provide a regularized opportunity for conflicting points of view to be expressed, an opportunity generally not otherwise available. Thus, the group's discussions can, at a minimum, sensitize program

administrators and prison officials to the critical issues.

When this committee, including both prisoners and staff members, has chosen the goals and methods of the program, each potential participant should have a realistic right to decline participation. If a prisoner does refuse to cooperate, he should neither lose privileges he already has, nor receive additional punishment, for so declining. The presentation of the program given to him should include a description of the benefits of participation, both in the institution and after the prisoner has left there. Ideally, the prisoner should be offered a choice among several different kinds of programs, rather than the single alternative of a behavior modification program or nothing.

Implications for Behavior Modification of Emerging Legal Rulings

In the last few years, the courts have begun to make rulings on the rights of institutionalized persons, including the mentally ill. The emerging law may have a major impact on behavior modification programs, in particular, because the recent rulings extend rights that are considered basic and that must presumably be available to all persons. While even the major decisions apply legally only in the jurisdiction where they are announced (unless they are ratified by the U.S. Supreme Court), often other areas will adopt rules or pass legislation that is consistent with the decisions, so that they often have impact far beyond a circumscribed geographic area.

The recent decisions are an important step forward in defining the rights of patients more clearly. In particular, the identification of specific items and activities to which the patients are entitled under all circumstances seems to be a major advance. Even though these legal rulings have the effect of requiring the behavioral worker to be far more ingenious in selecting reinforcers for use in institutions (as explained below), this professional inconvenience is far outweighed by the gain in human rights for the patients. No therapeutic program should have to depend for its existence on the continuation of a dehumanizing environment.

Judicial rulings are not necessary to emphasize that aversive techniques are neither legally nor ethically acceptable when they are used solely for oppressive purposes or without the consent of the person on whom they are used, or his guardian. The recent legal reinterpretations relating to human welfare have been concerned mainly with limiting possible abuses of positive reinforcement.

For example, one of the most common ways for mental hospital patients to earn money or tokens for token programs is by working in on- and off-ward jobs. Such employment is justified by mental health professionals on the grounds that it has an educational purpose: It teaches the patients skills needed in the outside world. The decision in *Wyatt* v. *Stickney*[4] seems to have restricted the use of hospital work as a means of earning money or tokens. In that decision, the court barred all involuntary work by mentally handicapped patients on hospital operations and maintenance, and specifically said that privileges should not be contingent on the patients' work on such jobs. A similar ruling was made in *Jobson* v. *Henne*.[5]

Usually when patients work on hospital jobs, they are compensated at a level far below the prevailing wage, or even below the minimum legal wage. This practice of employing institutionalized persons without normal compensation to perform productive labor associated with the maintenance of the institution has been called "institutional peonage" (Bartlett 1964). The *Wyatt* decision specified jobs that may be done by mentally handicapped patients and held that the patients must be compensated for that work at the prevailing minimum wage. Another recent case, *Souder* v. *Brennan*,[6] extended the principle of minimum wage compensation to all institutionalized persons in non-Federal facilities for the mentally ill and mentally retarded. While the minimum wage requirement may seem reasonable on the face of it, it may be a problem for many mental institutions and institutions for the retarded that cannot afford even the minimum wage. Under *Wyatt*, apparently the only types of work exempt from minimum wage coverage are therapeutic work unrelated to hospital functioning, and tasks of a personal housekeeping nature (Wexler 1973).

Among the reinforcers used in some token economies are such basic aspects of life as food, mattresses, grounds privileges, and privacy. That is, in these programs, the patients have been able to have these items or engage in these activities only if they were able to purchase the item or activity with their tokens. According to recent legal developments, such

as the *Wyatt* v. *Stickney* case, patients have a constitutional right to a residence unit with screens or curtains to insure privacy, a comfortable bed, a closet or locker for personal belongings, a chair, a bedside table, nutritionally adequate meals, visitors, attendance at religious services, their own clothes or a selection of suitable clothing, regular physical exercise including access to the outdoors, interaction with members of the opposite sex, and a television set in the day room. In other cases (*Inmates of Boys' Training School* v. *Affleck*[7] and *Morales* v. *Turman*[8]), similar kinds of activities and amenities were ordered to be available to juveniles in residential facilities. Thus, these legal rulings appear to have defined as basic rights many of the items and activities that have till now been employed as reinforcers in token economies.

The *Wyatt* decision was upheld on appeal by the U.S. Court of Appeals for the Fifth Circuit.[9] Even before that action, the ruling was already influential. However, because of inconsistencies among rulings, it is not clear at the moment just how much these rulings entitle the members of various institutionalized populations to have, and what sorts of items and activities can be restricted to those persons with sufficient tokens to purchase them (Wexler 1973).

Further, the new rulings do not totally prevent the inclusion in a token economy of the various items and activities named in the rulings. Rather, the result of the rulings is to permit the restriction in availability of these items and activities only with the consent of the patients or representatives of the patients. That is, these constitutional rights, like other constitutional rights, can be waived in suitable circumstances by the individuals involved. For example, a patient may consent to having his access to television restricted so that television programs might be available to him only following changes in his behavior that he desires to make.

Mental health workers who want to use the token economy procedure are now beginning to search for new types of reinforcers or new methods of reinforcement delivery that will not require special waivers of the constitutional rights of the patients. Suitable reinforcers would be those beyond which any patient would ordinarily be entitled, or to which he would normally have access. Many professionals believe that such new types of reinforcers will be developed, that behavior change can be produced without depriving patients of the basic necessities or asking them to waive their constitutional rights, and that this entire legal development is a significant step forward. The rulings, however, are recent ones, and extensive changes in practice have yet to occur.

Recent legal rulings have implications for behavior modification procedures other than the token economy. For example, *Wyatt* specified in detail the conditions under which electric shock devices could be used with mentally retarded residents. That ruling, and *New York State Association for Retarded Children* v. *Rockefeller*[10] also, set limits on the use of seclusion with mentally retarded and mentally ill patients.

Other legal rulings (e.g., *Rouse* v. *Cameron*[11] and *Donaldson* v. *O'Connor*[12]) have held that patients have a right to treatment. Possible implications of this might be an extension of patients' rights with concomitant restrictions on the use of some behavior modification techniques. At the same time, a right to effective treatment might result in a requirement that all therapies include the sort of continual monitoring of effectiveness that is generally standard practice in behavior modification. Judicial rulings in this area have been inconsistent, however, some supporting a right to treatment (e.g., *Rouse* v. *Cameron* and *Wyatt* v. *Stickney*), and some holding that there is no legal obligation to provide treatment (e.g., *Burnham* v. *Department of Public Health of the State of Georgia*[13] and *New York State Association for Retarded Children* v. *Rockefeller*). In the 1974 appellate court decision upholding *Wyatt*, the court also overruled the lower court decision in the *Burnham* case. Thus, the Fifth Circuit Court has ruled that, for that jurisdiction, mental patients as a class have a Federal constitutional right to adequate treatment when they are committed against their will to State institutions. Inconsistencies remain, however, especially in decisions regarding voluntary hospitalization (Budd and Baer, in press). It is still too early, also, to draw clear implications for behavior modification from the appellate court decisions on right to adequate treatment.

ETHICS IN BEHAVIOR MODIFICATION

Recently, many persons have expressed increas-

ing concern that those who conduct behavior modification programs should take special care that their methods are ethical and that the individuals undergoing behavior change are protected. While, on the whole, researchers and therapists using behavior modification methods have exercised normal caution, some aspects of the problem have not always received the attention that they deserve.

One difficulty in establishing ethical standards for behavior modification is that the issues and problems are different for different populations in different settings. Informed consent, for example, is clearly meaningful when a normal adult voluntarily goes to an outpatient clinic to obtain guidance in altering a specific behavior that he wants to change. However, when prisoners are offered the opportunity of participating in behavior modification, it is by no means clear that they can give truly voluntary consent.

A further difficulty in this area is that the appropriate person to determine the means and goals of treatment is different for different populations in different settings. The mental health professional must decide in each instance who his client is, that is, who the person or group is with whom he should negotiate regarding the choice of means and goals for a behavior modification program. It is often both obvious and correct that the ostensible client is the actual one. For example, a neurotic patient comes to a clinic to be relieved of his fear of flying in planes: The patient, determining for himself the goal of therapy, is the true client. Or, when a husband and wife are referred to a mental health worker to learn contingency contracting as a method of improving their marriage, it is generally clear that both partners have chosen the goal of improvement of their interpersonal relations. The mental health worker's responsibility is to assist them in achieving this goal.

On the other hand, when a behavioral consultant is asked to help a teacher keep her pupils in their seats, working quietly at all times, the ethical situation is less clear. Are these the optimum classroom conditions for learning, and are the children's best interests served by teaching them to be still, quiet, and docile (Winett and Winkler 1972; O'Leary 1972)? The mental health professional may want to suggest alternative goals, or work together with the class and the teacher in developing appropriate goals.

Similarly, when an administrator of an institution for the retarded asks a behavioral professional to establish a token economy so that the inmates will be motivated to work on jobs for the hospital, the professional may want to work together with an advisory committee to determine the relative value of that work activity for the hospital and for the retardates. While he is being asked to have the hospital as his client, he needs also to consider the rights of the patients, the potential benefits to them of the activity, and any risks that may be involved. The professional may decide, for example, that such hospital jobs have minimal benefit for the patients, and thus may feel that the institution's goal is an inappropriate one. Identifying the true client is also a critical problem when behavior modification programs are used in prisons.

Suggested procedures. Ethical safeguards for behavior modification programs need to take a number of factors into account: client involvement, a balance of risk and benefit, appropriate review by outside persons, the efficacy of the proposed procedures, and the plans for accountability of the program.

In discussing these complex issues, we are aware that the procedures we suggest have relevance for all types of mental health programs, not just for behavior modification. In this paper, we do not attempt to address these complex issues in that broader context. However, we recognize that the full range of concerns mentioned here applies in all mental health settings.

Ethical responsibility demands that members of the client population or their representatives be seriously consulted about both the means and the goals of programs, before the programs are introduced to change behavior. The persons planning the program need to evaluate the extent to which the members of the target population can give truly informed consent to the program. This involves (1) preparation of a description of the program and its goals so that the persons will know what is to be involved, (2) an assessment of the extent to which they are competent to understand the proposal and make an appropriate judgment about it, and (3) an evaluation of the degree to which their consent can be truly voluntary.

The client himself, or the advisory committee, together with the mental health worker, should weigh the potential benefits to the client of the change that is expected to result from the proposed

behavior modification program, against an evaluation of possible risks from using the procedure. This balance can be a difficult one to reach, because the various persons involved may well each see the situation from his own point of view. Thus, the mental health worker might find a proposed technique acceptable because it produces rapid improvement in seriously maladaptive behavior, while client representatives might object to that same technique because it violates the client's rights or restricts his freedom, however briefly, and regardless of ensuing benefits. The client may disagree entirely with the goal of the program that has been chosen by the institution in which he is confined, on the grounds that he is not interested in the supposed benefits offered.

The definitions of risk and benefit will be different in different settings and will also change over time, as customs, knowledge, and values change. Thus, while all the members of an advisory committee may share the goal of helping the client, reaching consensus on how to achieve that goal may involve considerable compromise by persons representing differing points of view.

In many cases, the individual whose behavior is to be changed will be able to negotiate the proposed means and goals directly with the professional personnel. In that way, mental health worker and client can arrive at a mutual agreement or contract that would specify the rights and responsibilities of each of them. However, when the program concerns individuals who have been shown to be incapable of making their own decisions, it will be necessary for the mental health worker to deal with a representative or surrogate for the specific persons who would participate in the proposed program.

The less directly the persons are involved in the initial determination of means and goals, the more protections of those persons should be built into the system. Thus, when the mental health worker is not directly accountable to his client, an advisory committee should be established that would cooperate with the mental health professional in choosing the methods and goals of the behavior modification program. This committee should include either representatives of the persons whose behavior is to be modified, their guardians, or advocates.

The establishment of a suitably constituted review committee does not automatically guarantee that approved programs will include appropriate protections. The official guardians of the persons in the program may, for example, have a vested interest in controlling those persons in a way more convenient for the guardians than beneficial for the persons in the program. The mental health professional, too, cannot be viewed as an entirely disinterested party, especially when he is employed by the institution charged with the care of the persons in the program. In general, members of review committees need to be aware of the conflicting interests involved, and sensitive to the factors influencing their own and each other's behavior, so that subtle coercions are not used to manipulate the decisions.

Effectiveness and accountability are other key elements of ethical responsibility in behavior modification. The results of the behavior modification program must be carefully monitored to ensure that the goals agreed on by the advisory committee, or by client and therapist, are being achieved. If they are not, sound practice requires a reevaluation and revision of the methods being used. In addition, the persons conducting behavior modification programs must be accountable to those whose behavior is being changed, or to their representatives. Information on the effectiveness of the program should be made available to the consumers on a regular basis.

Behavior modification programs have an additional special ethical problem because the procedures are generally simple enough to be used by persons lacking the training to evaluate them appropriately. Thus, a further safeguard that should be built into behavior modification programs is a limitation on the decisionmaking responsibilities of program staff to those matters in which they have expertise. Persons with appropriate professional qualifications, such as a suitable level of training and supervised clinical practice, are able to design and organize treatment programs, develop measurement systems, and evaluate the outcome of behavior modification programs. Such persons should be familiar with the ethical guidelines of their particular profession. Technicians, paraprofessionals, and other workers with only minimal training in behavior modification generally can function in the setting in which behavior is being modified, but should not initiate decisions affecting the welfare of other individuals, unless those decisions are reviewed by the professional staff (Sulzer-Azaroff, Thaw, and Thomas 1975). Given

such a delegation of responsibility, review of behavior modification programs should be concerned both with the individuals who make the critical treatment decisions and with the adequacy of supervision of nonprofessional staff.

Ethical safeguards: The professions. The need to adhere to sound ethical practices is accepted by all trained mental health practitioners. Practitioners using behavior modification methods are expected to adhere to existing codes of ethics formulated by their professions. In addition, the Association for Advancement of Behavior Therapy (AABT) is currently formulating a set of standards for practice. The Behavior Therapy and Research Society publishes a list of behavior therapists whose qualifications have undergone peer evaluation.

The AABT also has a system of consultative committees that are coordinated by the president of the Association. Persons who are associated with institutions or programs and who are concerned about present or proposed behavior therapy procedures can ask the AABT president to appoint a committee of persons to go to the site, investigate, and make an advisory report. These reports are compiled into a casebook of standards of practice.

Ethical safeguards: DHEW policy and protections. Much of the biological, medical, and behavioral research conducted in this country is supported by funds from the Department of Health, Education, and Welfare (DHEW). According to the current DHEW policy, which was established by the May 30, 1974, regulations (Chapter 45, Code of Federal Regulations, Subtitle A, Part 46), in activities involving human subjects, the rights and welfare of the subjects should be adequately protected; the risks to an individual from participation should be outweighed by the potential benefits to him and by the importance of the knowledge to be gained; and informed consent should be obtained by methods that are adequate and appropriate.

According to DHEW policy, risks are defined to include not only potential physical harm, but also adverse psychological reactions or social injury. The policy gives as the basic elements of informed consent: a fair explanation of the procedures to be followed and their purposes, including an identification of those that are experimental; a description of any expected discomforts and risks; a description of the benefits to be expected; a disclosure of appropriate alternative procedures that would be advantageous for the subject; an offer to answer any inquiries concerning the procedures; and an instruction that the subject is free to withdraw his consent and to discontinue participation in the project or activity at any time without prejudice to himself.

As applied to research on behavior modification, this policy means that the person receiving the service or his representative should be told that the person will be receiving behavior modification treatment, and what the treatment program will involve. He should be told what problems might arise, if any, and what the goal of the treatment is. It should be made clear to him that he should feel free to drop out of the study at any time. Not mentioned in the official regulations, but part of recommended practice in this area, is that the client or his representative should cooperate with the mental health worker in specifying the goals of the behavior modification treatment.

The DHEW regulations place primary responsibility for safeguarding the rights and welfare of subjects on the organization conducting the activities. The responsibility, however, is shared by the organization's review committee and the DHEW staff and advisory committees, each of whom determines independently the adequacy of proposed procedures for the protection of human subjects. According to the regulations, any institution conducting DHEW-funded research, development, or related activities involving human subjects must establish a committee with responsibility for reviewing any application for support of such activities, to insure that the protocol adequately fulfills the policy for the protection of the subjects.

The National Institutes of Health established a study group that is charged with reviewing various aspects of the DHEW policy on human subjects. The group drafted proposed rules dealing with protection of subjects in prisons and mental institutions, and with protection of subjects in research involving pregnant women, abortuses, fetuses, and products of *in vitro* fertilization. Public comment on these proposals has been received.

Many hospitals and research institutions have used the DHEW regulations as a model for structuring their own policy for the protection of human subjects. Others have gone beyond the regulations to require, for example, the presence of the sub-

ject's personal physician, personal lawyer, and immediate kin, with specific periods of time being allocated for discussion before consent is given. This is an area that is receiving increasing attention.

The National Research Act (PL 93-348) provided for a National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research, which will be in existence for 2 years, beginning in 1974. This Commission is charged with investigating a number of issues, including the problems of obtaining informed consent from children, prisoners, and the institutionalized mentally infirm when they are asked to participate in experiments. The Commission has also been asked to determine the need for a mechanism that will extend the DHEW regulations beyond DHEW-funded research activities to all activities with human subjects, including research and health services.

SUMMARY AND CONCLUSIONS

Behavior modification currently is the center of stormy controversy and debate. We have attempted to put these problems in perspective, through a discussion of what behavior modification is and what it is not, and a review of the major issues.

Many years of laboratory research provide the basis and rationale for the development of behavior modification techniques and behavioral treatments. The behavior modification methods currently being used include procedures suitable for use in the clinic, such as desensitization, and in the mental institution, such as the token economy. The procedures can be used with normal adults and children and with the mentally disadvantaged, including the retarded, the senile, and the psychotic. Behavior modification methods have been used to ameliorate a wide range of problems, including mutism, self-destructive behavior, inappropriate fears, and nervous habits. Also, behavior modification methods have been used to teach a great variety of appropriate, normal behaviors, including normal speech, appropriate social behavior, and suitable classroom skills.

The Federal Government continues to support and encourage research and demonstrations that test new behavior modification techniques, that seek to refine existing ones and apply them to new clinical populations and new settings, and that promote the dissemination of techniques that have been positively evaluated. A particularly strong need is for additional research comparing the efficacy of behavior modification methods with that of alternative treatment approaches. Research is also needed on ways to deliver behavior modification techniques to larger numbers of persons in less restrictive settings than the institutions where much of the research, until now, has been done.

Concern has been expressed that behavior modification methods may be used by those in power to control and manipulate others. Some critics have charged that the use of behavior modification methods is inconsistent with humanistic values. However, all kinds of therapies involve attempts to change the patient in some way. Behavior modification, like other therapeutic methods, requires a cooperative individual in order for it to be effective. Countercontrol, especially countercontrol based on knowledge of behavioral principles, is a major way that individuals can respond to any attempted manipulation.

The concerns that have been expressed about behavior modification have stimulated a reexamination of the assumptions and ethics of all psychosocial therapies. Ethical problems are particularly serious when therapies are used within institutions such as mental hospitals and prisons, or with the institutionalized mentally retarded and senile. In these settings, mental health workers have to be sensitive to the implications of the imbalance in power between them and their clients.

Aversive procedures, easy to abuse, have also raised serious concerns. These methods can, however, be used to benefit patients greatly, as when aversive techniques are used to eliminate life-threatening self-destructive behavior. Appropriate safeguards need to be provided, whenever aversive control techniques are proposed. Greater involvement of clients or their representatives in decisions about the means and goals of treatment programs will help protect persons participating in the programs.

Perhaps the most controversy has arisen in connection with the use of behavior modification in prisons. Behavior modification programs have, in some places, been designed to preserve authoritarian control and discipline, rather than to teach skills that would benefit the prisoners, once they are released. It is not clear whether prisoners are ever able

to be true volunteers in any experimental program held in a prison. Here, too, safeguards must be built into the structure of any behavioral program.

Recent legal rulings have provided significant gains in human rights, especially for involuntarily committed patients. The rulings have called attention to possible abuses of the use of positive reinforcement and have extended the limits of institutionalized persons' basic rights.

In addition to discussing these issues, we have suggested some ways that safeguards might be designed for behavior modification programs. The issues are relevant to all types of mental health programs, and many of our proposed solutions would be applicable more generally as well. They are discussed here, however, only as they apply specifically in behavior modification.

Ethical responsibility demands that members of the client population or their representatives be consulted about both the means and goals of programs, and that these persons have an opportunity to weigh the balance of risk and benefit in any proposed program. Programs should be monitored to ensure that they are effective, and those persons conducting the programs should be accountable to those whose behavior is being changed, as long as the program is continued.

The Department of Health, Education, and Welfare is currently developing new regulations for the protection of human subjects, and the National Commission for the Protection of Human Subjects of Biochemical and Behavioral Research is also investigating related topics.

Public debate will surely continue concerning the issues that surround the use of behavior modification techniques. Professional evaluation of these techniques and public discussion of them can help prevent abuses in the use of behavior modification procedures, as well as foster public understanding and acceptance of beneficial procedures. London (1974) contends that ". . . a decent society regulates all technology that is powerful enough to affect the general welfare, at once restricting the technicians as little as possible and as much as necessary." In that context, both continued monitoring of behavior modification by the public and further research on this important technology are needed to serve society and the individuals who make it up.

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[4] 325 F. Supp. 781 (M.D. Ala. 1971), 334 F. Supp. 1341 (M.D. Ala. 1971), 344 F. Supp. 373 (M.D. Ala. 1972), and 344 F. Supp. 387 (M.D. Ala. 1972). This case was known as *Wyatt* v. *Aderholt* on appeal.

[5] 335 F. 2d 129 (2d Cir., 1966).

[6] 367 F. Supp. 808 (D.D.C. 1973).

[7] 346 F. Supp. 1354 (D.R.I. 1972).

[8] 364 F. Supp. 166 (E.D. Tex. 1973).

[9] *Wyatt* v. *Aderholt*, No. 72-2634 (5 Cir., Nov. 8, 1974).

[10] 357 F. Supp. 752 (E.D. N.Y. 1973).

[11] 373 F. 2d 451 (D.C. Cir., 1966).

[12] 493 F. 2d 507 (5 Cir., 1974).

[13] 349 F. Supp. 1335 (N.D. Ga. 1972), appeal docketed, No. 72-3110, 5 Cir., Oct. 4, 1972. This case was consolidated for argument on appeal with *Wyatt*.

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